

Amendments to the Claims:

1. (Previously Presented) A method, comprising:  
monitoring a length of a data queue in a first network element as an indication of future need of communication resources in the first network element, wherein the indication comprises a coded value of the length of the data queue in the first network element, and wherein the length of the data queue is embedded in a data block from the first network element; and  
allocating the communications resources for a transmission between the first network element and a second network element based on the indication.
2. (Cancelled)
3. (Previously Presented) The method according to claim 1, wherein the monitoring of the indication further comprises monitoring information about a transmit buffer of the first network element.
4. (Previously Presented) The method according to claim 1, wherein the monitoring of the indication further comprises monitoring information on additional resources needed by said first network element.
- 5-6. (Canceled)
7. (Previously Presented) The method according to claim 1, wherein the first network element comprises a mobile station and the second network element comprises a base station of a wireless communication network.
8. (Previously Presented) A system, comprising:  
a plurality of first stations;  
a second station connected to the plurality of first stations through a plurality of

communication links; and

a controller configured to control allocation of the communication resources among the communication links, wherein

the controller is separate and independent from the first stations, said allocation is performed in accordance with information transmitted from each of the first stations, wherein the information from each of the first stations comprises a data block embedding a coded value of a length of a data queue in each of the first stations, and

the controller is configured to use the length of a data queue [[is]] as an indication of future need of communication resources for each of the first stations.

9. (Previously Presented) The system according to claim 8, wherein said controller is part of a base station.

10-12. (Cancelled)

13. (Previously Presented) The system according to claim 8, wherein each of said first stations are configured to transmit a transmission comprising a plurality of data blocks, and wherein the coded value of the length of a data queue of one of the first stations is provided in each of said data blocks in the transmission associated with said one first station.

14. (Currently Amended) An apparatus, comprising:  
a ~~controller~~ processor configured to cause the apparatus to at least:  
control allocation of communication resources for a mobile station, wherein the allocation is based upon queue length information received from the mobile station that is embedded in a data block, and

use the queue length information as an indication of future need of communication resources for the mobile station.

15. (Currently Amended) An apparatus, comprising:  
a processor configured to cause the apparatus to at least:  
encode a code representative of a length of a data queue embedded in a data block, and  
~~transmit~~cause transmission of data packets and said data block with said code included in the data block as a field to a network element, wherein  
the length of the data queue is used useable by the network element as an indication of future need of communication resources for the apparatus.

16. (Previously Presented) The method according to claim 1, wherein the monitoring further comprises receiving data packets and wherein each of the data packets comprises the indication of the length of the data queue.

17. (Canceled)

18. (Previously Presented) The apparatus according to claim 26, wherein each of said data packets comprises said queue length information.

19. (Previously Presented) The apparatus according to claim 15, wherein each of said data packets comprises said code.

20. (Previously Presented) An apparatus, comprising:  
decoder means for decoding a code representative of a length of a data queue in a mobile station, wherein the length of the data queue is embedded in a data block from the mobile station; and  
controller means for controlling allocation of communication resources, wherein said decoder means is configured to decode and provide queue length information for the mobile station to the controller means, and  
the controller means is configured to use the queue length information as an indication of future need of communication resources for the mobile station.

21. (Currently Amended) An apparatus, comprising:

[[D]] data queue means for receiving data packets;

encoder means for encoding a code representative of a length of the data queue means, wherein the encoder means is configured to embed the length of the data queue in a data block; and

transmitter means for transmitting said data packets and said data block to a network element, wherein

said code is included in the data block as a field, and

the length of the data queue is used useable by the network element as an indication of future need of communication resources for the apparatus.

22. (Currently Amended) A method, comprising:

encoding a code representative of a length of a data queue in a first network element, wherein the length of the data queue is embedded in a data block and the data queue is configured to receive the data block; and

~~transmitting~~ causing transmission of data packets comprising a field comprising said code to a second network element, wherein

said code is used when allocating communication resources for a transmission between the first network element and the second network element, and

the length of the data queue is used useable by the second network element as an indication of future need of communication resources in the first network element.

23. (Previously Presented) The method according to claim 22, wherein the encoding of the code further comprises encoding information about a transmit buffer of the first network element.

24. (Previously Presented) The method according to claim 22, wherein the encoding of the code further comprises encoding information on additional resources needed by said first network element.

25. (Previously Presented) The method according to claim 22, wherein the first network element comprises a mobile station and the second network element comprises a base station of a wireless communication network.

26. (Previously Presented) The apparatus according to claim 14, wherein the controller is further configured to decode a code representative of the queue length information for the mobile station.

27. (Previously Presented) The apparatus according to claim 26, wherein the code comprises information about a transmit buffer for the mobile station.

28. (Previously Presented) The apparatus according to claim 26, wherein the code comprises information on the additional resources needed by the mobile station.

29. (Previously Presented) The apparatus according to claim 15, wherein the code further comprises information about a transmit buffer for the apparatus.

30. (Previously Presented) The apparatus according to claim 15, wherein the code further comprises information on additional resources needed by said apparatus.

31. (Currently Amended) A computer-readable storage medium storing a computer program embodied on a computer-readable storage medium, the program configured to control a processor to perform a process, the process comprising:

monitoring a length of a data queue in a first network element as an indication of future need of communication resources in the first network element, wherein the indication comprises a coded value of a length of a data queue in the first network element, and wherein the length of the data queue is embedded in a data block from the first network element; and

allocating the communications resources for a transmission between the first

network element and a second network element based on the indication.

32. (Currently Amended) A computer-readable storage medium storing a computer program embodied on a computer-readable storage medium, the program configured to control a processor to perform a process, the process comprising:

encoding a code representative of a length of a data queue in a first network element, wherein the data queue is configured to receive data, and wherein the length of the data queue is embedded in a data block from the first network element; and

transmitting-causing transmission of data packets comprising a field comprising said code to a second network element,

wherein

said code is used when allocating communication resources for a transmission between the first network element and the second network element, and

the length of the data queue is used useable by the second network element as an indication of future need of communication resources in the first network element.

33. (Currently Amended) An apparatus, comprising:

a processor configured to cause the apparatus to at least:

monitor a length of a data queue in a first network element as an indication of future need of communication resources in the first network element, wherein the indication comprises a coded value of the length of the data queue in the first network element, and wherein the length of the data queue is embedded in a data block from the first network element, and

allocate the communications resources for a transmission between the first network element and the apparatus based on the indication.

34. (Currently Amended) The apparatus according to claim 33, wherein the processor is further configured to cause the apparatus to monitor information about a transmit buffer of the first network element.

35. (Currently Amended) The apparatus according to claim 33, wherein the processor is further configured to cause the apparatus to monitor information on additional resources needed by said first network element.

36. (Previously Presented) The apparatus according to claim 33, wherein the first network element comprises a mobile station and the second network element comprises a base station of a wireless communication network.

37. (Currently Amended) The apparatus according to claim 33, wherein the processor is further configured to cause the apparatus to perform the monitoring by receiving data packets and wherein each of the data packets comprises the indication of the length of the data queue.

38. (Previously Presented) An apparatus, comprising:  
monitoring means for monitoring a length of a data queue in a first network element as an indication of future need of communication resources in the first network element, wherein the indication comprises a coded value of the length of the data queue in the first network element, and wherein the length of the data queue is embedded in a data block from the first network element, and  
allocating means for allocating the communications resources for a transmission between the first network element and the apparatus based on the indication.

39. (Previously Presented) A method, comprising:  
controlling allocation of communication resources for a mobile station by a controller, wherein the allocation is based upon queue length information received from the mobile station that is embedded in a data block; and  
using, by the controller, the queue length information as an indication of future need of communication resources for the mobile station.

40. (Previously Presented) The method according to claim 39, further

comprising:

decoding, by the controller, a code representative of the queue length information for the mobile station.

41. (Previously Presented) The method according to claim 40, further comprising:

receiving a plurality of data packets, wherein each of said data packets comprises said queue length information.

42. (Previously Presented) The method according to claim 40, wherein the decoding of the code comprises decoding information about a transmit buffer for the mobile station.

43. (Previously Presented) The method according to claim 40, wherein the decoding of the code further comprises decoding information on the additional resources needed by the mobile station.

44. (Currently Amended) A computer-readable storage medium storing a computer program ~~embodied on a computer-readable storage medium~~, the program configured to control a processor to perform a process, the process comprising:

controlling allocation of communication resources for a mobile station, wherein the allocation is based upon queue length information received from the mobile station that is embedded in a data block; and

using the queue length information as an indication of future need of communication resources for the mobile station.

45. (Previously Presented) An apparatus, comprising:  
controlling means for controlling allocation of communication resources for a mobile station; and

allocating means for performing the allocation based upon queue length



information received from the mobile station that is embedded in a data block, wherein the allocating means is configured to use the queue length information as an indication of future need of communication resources for the mobile station.

46. (Currently Amended) A method, comprising:  
encoding a code representative of a length of a data queue embedded in a data block in a first network element; and  
~~transmitting causing transmission of~~ data packets and said data block with said code included in the data block as a field to a second network element, wherein  
the length of the data queue is ~~used~~ useable by the second network element as an indication of future need of communication resources for the first network element.

47. (Currently Amended) The method according to claim 46, wherein said ~~transmitting causing transmission of~~ said data packets comprises ~~transmitting causing transmission of~~ a plurality of data packets, and wherein each of said data packets comprises said code.

48. (Previously Presented) The method according to claim 46, wherein the encoding of the code further comprises encoding information about a transmit buffer for the first network element.

49. (Previously Presented) The method according to claim 46, wherein the encoding of the code further comprises encoding information on additional resources needed by said first network element.

50. (Currently Amended) A computer-readable storage medium storing a computer program ~~embodied on a computer-readable storage medium~~, the program configured to control a processor to perform a process, the process comprising:  
encoding a code representative of a length of a data queue embedded in a data block by a first network element; and

~~transmitting~~ causing transmission of data packets and said data block with said code included in the data block as a field to a second network element, wherein

the length of the data queue is ~~used~~ useable by the second network element as an indication of future need of communication resources for the first network element.

51. (Currently Amended) An apparatus, comprising:

encoding means for encoding a code representative of a length of a data queue embedded in a data block; and

transmitting means for transmitting data packets and said data block with said code included in the data block as a field to a network element, wherein

the length of the data queue is ~~used~~ useable by the network element as an indication of future need of communication resources for the apparatus.

52. (Currently Amended) An apparatus, comprising:

a processor configured to cause the apparatus to at least:

encode a code representative of a length of a data queue in the apparatus, wherein the length of the data queue is embedded in a data block and the data queue is configured to receive the data block, and

~~transmit~~ cause transmission of data packets comprising a field comprising said code to a network element, wherein

said code is used when allocating communication resources for a transmission between the apparatus and the network element, and

the length of the data queue is ~~used~~ useable by the network element as an indication of future need of communication resources for the apparatus.

53. (Previously Presented) The apparatus according to claim 52, wherein the code further comprises information about a transmit buffer of the apparatus.

54. (Previously Presented) The apparatus according to claim 52, wherein the code further comprises information on additional resources needed by the apparatus.

55. (Previously Presented) The apparatus according to claim 52, wherein the apparatus comprises a mobile station and the network element comprises a base station of a wireless communication network.

56. (Currently Amended) A computer-readable storage medium storing a computer program embodied on a computer-readable storage medium, the program configured to control a processor to perform a process, the process comprising:

encoding a code representative of a length of a data queue in a first network element, wherein the length of the data queue is embedded in a data block and the data queue is configured to receive the data block; and

~~transmitting~~ causing transmission of data packets comprising a field comprising said code to a second network element, wherein

said code is used when allocating communication resources for a transmission between the first network element and the second network element, and

the length of the data queue is ~~used~~ useable by the second network element as an indication of future need of communication resources for the first network element.

57. (Currently Amended) An apparatus, comprising:

encoding means for encoding a code representative of a length of a data queue in the apparatus, wherein the length of the data queue is embedded in a data block and the data queue is configured to receive the data block; and

transmitting means for transmitting data packets comprising a field comprising said code to a network element, wherein

said code is used when allocating communication resources for a transmission between the apparatus and the network element, and

the length of the data queue is ~~used~~ useable by the network element as an indication of future need of communication resources for the apparatus.

58. (Previously Presented) The method of claim 1, wherein the monitoring

further comprises monitoring a countdown value of the data block for an indication of the length of the data queue.

59. (Currently Amended) The apparatus of claim 14, wherein the ~~controller~~ apparatus is configured to cause the apparatus to perform the allocation based on the queue length information included in a countdown value of the data block.

60. (Currently Amended) The apparatus of claim 15, wherein the processor is configured to cause the apparatus to include the code representative of the queue length in a countdown value of the data block.

61. (Previously Presented) The method of claim 22, wherein the encoding further comprises encoding the code representative of the length of the data queue in a countdown value of the data block.

62. (Currently Amended) The apparatus of claim 33, wherein the processor is configured to cause the apparatus to monitor a countdown value of the data block for the indication of the length of the data queue.

63. (Previously Presented) The method of claim 39, wherein the controlling further comprises performing the allocation based on the queue length information included in a countdown value of the data block.

64. (Previously Presented) The method of claim 46, wherein the encoding further comprises including the code representative of the queue length in a countdown value of the data block.

65. (Currently Amended) The apparatus of claim 52, wherein the processor is configured to cause the apparatus to encode the code representative of the length of the data queue in a countdown value of the data block.

66. (New) The apparatus of Claim 14, further comprising a memory storing computer program code, wherein the at memory and stored computer program code are configured, with the processor, to cause the apparatus to at least:

control allocation of communication resources for a mobile station, and  
use the queue length information as an indication of future need of communication resources for the mobile station.

67. (New) The apparatus of Claim 15, further comprising a memory storing computer program code, wherein the at memory and stored computer program code are configured, with the processor, to cause the apparatus to at least:

encode a code representative of a length of a data queue embedded in a data block, and  
cause transmission of data packets and said data block with said code included in the data block as a field to a network element.

68. (New) The apparatus of Claim 33, further comprising a memory storing computer program code, wherein the at memory and stored computer program code are configured, with the processor, to cause the apparatus to at least:

monitor a length of a data queue in a first network element as an indication of future need of communication resources in the first network element, and  
allocate the communications resources for a transmission between the first network element and the apparatus based on the indication.

69. (New) The apparatus of Claim 52, further comprising a memory storing computer program code, wherein the at memory and stored computer program code are configured, with the processor, to cause the apparatus to at least:

encode a code representative of a length of a data queue in the apparatus, and  
cause transmission of data packets comprising a field comprising said code to a network element.

70. (New) The method of Claim 1, further comprising:

determining, based at least in part on the indication, whether the length of the data queue exceeds a segment rate; and

wherein in an instance in which it is determined that the length of the data queue exceeds the segment rate, allocating the communications resources comprises allocating additional communications resources for the transmission between the first network element and the second network element based at least in part on the indication.

71. (New) The method of Claim 70, further comprising, in an instance in which it is determined that the length of the data queue exceeds the segment rate:

determining an amount of additional bandwidth required to meet one or more of a delay or a rate requirement for data to be sent by the first network element; and

wherein allocating additional communications resources comprises allocating additional communication resources based at least in part on the determined amount of additional bandwidth.

72. (New) The method of Claim 70, wherein the coded value is less than a predefined value in an instance in which the length of the data queue is less than the segment rate, and wherein the coded value is at least the predefined value in an instance in which the length of the data queue exceeds the segment rate, and wherein determining whether the length of the data queue exceeds the segment rate comprises comparing the coded value to the predefined value.

73. (New) The method of Claim 22, wherein the code indicates whether the length of the data queue exceeds a segment rate.

74. (New) The method of Claim 73, further comprising:

determining whether the length of the data queue exceeds the segment rate; and  
wherein encoding the code comprises encoding the code based at least in part on

the determination of whether the length of the data queue exceeds the segment rate.

75. (New) The method of Claim 72, wherein:

in an instance in which the length of the data queue is less than the segment rate, encoding the code comprises encoding a code having a value less than a predefined value; and

in an instance in which the length of the data queue exceeds the segment rate, encoding the code comprises encoding a code having a value that is at least the predefined value.